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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|-----------------------------|---------------------|------------------|
| 09/936,632 | 02/21/2002 | Siemen Roelof Van Der Heide | 30394-1057 | 7250 |

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EXAMINER


JACKSON, ANDRE K

ART UNIT PAPER NUMBER

2856

DATE MAILED: 03/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|-------------------------------------|---|
| Office Action Summary | Application No. 09/936,632 | Applicant(s) HEIDE ET AL. | |
| | Examiner André K. Jackson | Art Unit 2856 |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moreau et al. in view of Zollinger et al. and Murakami et al.

Regarding claim 1, Moreau et al. disclose in the patent entitled "Multi-element ultrasonic probe for electronic scanning" a cable (10), a measuring head (4), a device to process measuring data (20) and a reel (15) for winding the cable on and off. Zollinger et al. disclose in the patent entitled "Apparatus for inspecting piping" a cable (60), a measuring head (driver coil 28), a device to process, a reel (spool 38) for winding the cable on and off and where the measuring head (driver coil 28) and reel (spool 38) are each individually incorporated in carrier members (body modules 26) moveable through the pipes or tubes and which members are sequentially interconnected with flexible couplings (connection seals 51) shown in Figures 1,4. Moreau et al. do not disclose where the measuring head and the reel are each individually incorporated in carrier members moveable through the pipes or tubes and which

members are sequentially interconnected with flexible couplings. However, Zollinger et al. disclose this feature in Figures 1,4. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Moreau et al. to include where the measuring head and reel are each individually incorporated in carrier members moveable through the pipes or tubes and which members are sequentially interconnected with flexible couplings. By adding this feature the apparatus would be able to keep each component separate and free from possible interference such as the spool becoming dislodge and striking the measuring head if the components were placed in the same compartment. Neither Moreau et al. nor Zollinger et al. disclose a reel for winding the cable on and off behind the measuring head at its distal end. However, Murakami et al. disclose in the patent entitled "Self-propelled mobile pipeline inspection apparatus and method for inspecting pipelines" a reel for winding the cable on and off behind the measuring head at its distal end (106, Figure 8). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Moreau et al. to include a reel for winding the cable on and off behind the measuring head at its distal end as taught by Murakami et al. By adding this feature the apparatus would be able to maintain coupling of the fiber to the measuring head since the fiber would remain stable between the measuring head and the reel.

Regarding claim 2, Moreau et al. do not disclose a cable that is a glass fiber and a feed device for feeding the measuring head. However, Murakami et

al. disclose a cable that is a glass fiber (108) and a feed device for feeding the measuring head (106). Therefore, it would have been obvious to modify Moreau et al. to include a cable that is a glass fiber and a feed device for feeding the measuring head as taught by Murakami et al. since using optical fiber makes the apparatus lighter and the feed device is needed to provide energy to the measuring head.

3. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moreau et al. in view of Zollinger et al. and Lund.

Regarding claim 1, Moreau et al. disclose a cable (10), a measuring head (4), a device to process measuring data (20) and a reel (15) for winding the cable on and off. Zollinger et al. disclose a cable (60), a measuring head (driver coil 28), a device to process, a reel (spool 38) for winding the cable on and off and where the measuring head (driver coil 28) and reel (spool 38) are each individually incorporated in carrier members (body modules 26) moveable through the pipes or tubes and which members are sequentially interconnected with flexible couplings (connection seals 51) shown in Figures 1,4. Moreau et al. do not disclose where the measuring head and the reel are each individually incorporated in carrier members moveable through the pipes or tubes and which members are sequentially interconnected with flexible couplings. However, Zollinger et al. disclose this feature in Figures 1,4. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Moreau et al. to include where the measuring head and reel are each

individually incorporated in carrier members moveable through the pipes or tubes and which members are sequentially interconnected with flexible couplings. By adding this feature the apparatus would be able to keep each component separate and free from possible interference such as the spool becoming dislodge and striking the measuring head if the components were placed in the same compartment. Neither Moreau et al. nor Zollinger et al. disclose a reel for winding the cable on and off behind the measuring head at its distal end. However, Lund discloses in the patent entitled "System for the internal inspection of pipelines" a reel for winding the cable on and off behind the measuring head at its distal end (4, Figure 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Moreau et al. to include a reel for winding the cable on and off behind the measuring head at its distal end as taught by Lund. By adding this feature the apparatus would be able to maintain coupling of the fiber to the measuring head since the fiber would remain stable between the measuring head and the reel.

Regarding claim 2, neither Moreau et al. nor Zollinger et al. disclose a cable that is a glass fiber and a feed device for feeding the measuring head. However, Lund discloses a cable that is a glass fiber (5) and a feed device for feeding the measuring head (4, Figure 1). Therefore, it would have been obvious to modify Moreau et al. to include a cable that is a glass fiber and a feed device for feeding the measuring head as taught by Lund since using optical fiber makes

the apparatus lighter and the feed device is needed to provide energy to the measuring head.

Regarding claim 3, both Moreau et al. and Zollinger et al. disclose where the feed device and other electronics are incorporated individually in carrier members near the distal end (Figure 10) and (Figure 1, Column 3, lines 34-48) respectively.

Regarding claim 4, Moreau et al. do not explicitly state that the couplings are flexible. However, Zollinger et al. disclose where the individual carrier members are sequentially interconnected by flexible couplings (Columns 3-4, Figure 4). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Moreau et al. to include where the individual carrier members are sequentially interconnected by flexible couplings since the couplings would need to be made of a flexible material in order to move through curved pipes.

4. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moreau et al. in view of Zollinger et al. and Lund as applied to claim 4 above, and further in view of Wernicke.

Regarding claim 5, neither Moreau et al., Zollinger et al. nor Lund disclose where the flexible couplings are formed by hydraulic tubes with a steel covering. However, Wernicke discloses in the patent entitled "Spiral tractor apparatus and method" flexible couplings formed by hydraulic tubes with a steel covering. Therefore, it would have been obvious to one of ordinary skill in the art

to modify Moreau et al. to include flexible couplings formed by hydraulic tubes with a steel covering as taught by Wernicke since steel provides a durable structure.

Regarding claim 6, it is well within the purview of the skilled artisan to provide where the length of the tubes are chosen because of its flexural stiffness in order to proceed through the pipes without getting stuck and the ability to move through the pipes with ease.

Response to Arguments

5. Applicant's arguments filed 12/15/03 have been fully considered but they are not persuasive. Applicant argues that since Lund does not relate to the inspection of small diameter pipes and tubes, as Moreau et al. do, these two references cannot be combined. However, the claim calls for "An apparatus for the internal inspection of pipes and tubes". Both references relate to the inspection of pipes as admitted by the Applicant and there is nothing in the claim that requires a specific pipe and tube size for the apparatus to proceed through therefore, the combination is proper.
6. Applicant's amendment necessitated the new ground of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to André K. Jackson whose telephone number is (571) 272-2196. The examiner can normally be reached on Mon.-Thurs. 7AM-4PM.

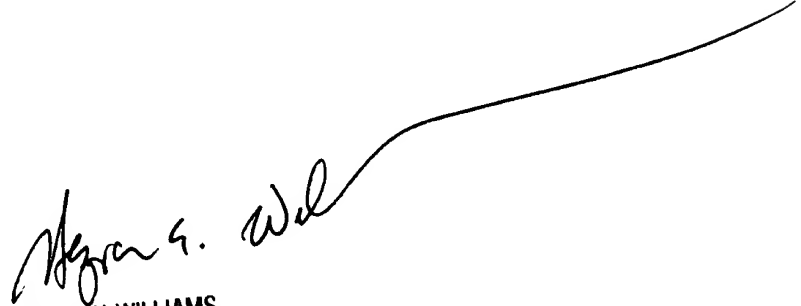
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2856

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A.J. 

March 26, 2004



HEZRON WILLIAMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800